

Rocky Mountain Geographic Science Center

Interagency Operating Picture (IOP)

A Situational Awareness Tool

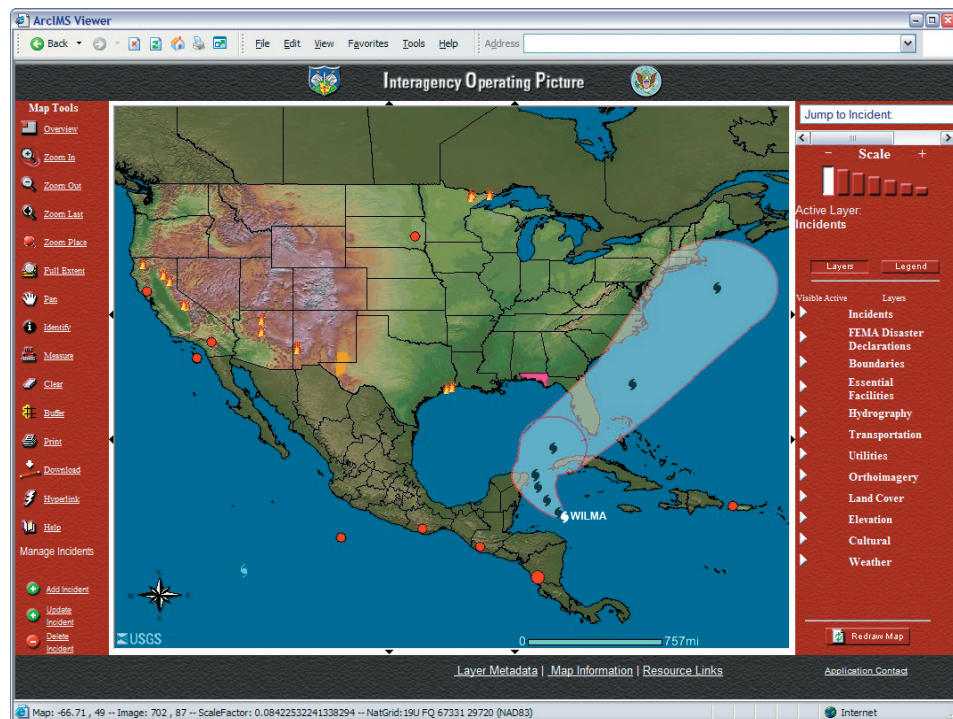
Introduction

A critical component of our Nation's homeland security is the requirement to develop timely, accurate situational awareness (SA) and the capability to share this "awareness" throughout the homeland security and emergency response communities. Developing the best possible SA requires the integration of geospatial data, situation reports, and other essential information. This combination of information is especially valuable when responding to events that are rapidly changing, occurring across the landscape, varied in nature, and could potentially damage life, property and infrastructure.

In response to this requirement, and in partnership with NORAD/USNORTHCOM, the U.S. Geological Survey (USGS) Rocky Mountain Geographic Science Center has developed a SA tool called the Interagency Operating Picture (IOP). The IOP application actively supports USNORTHCOM/NORAD and the Domestic Warning Center (DWC), which relies on accurate and timely situational awareness before, during and after an event. IOP allows users to track the "big picture" of natural and man-made disasters occurring in and around the country, and also "zoom-in" to understand the geographic implications of any specific events.

Geospatial Data and Dynamic Data Feeds

Combining base geospatial data from with dynamic incident information, a key strength of IOP, provides users with an integrated visual overview of events. The underlying geospatial infrastructure of IOP is a collection of shaded relief, transportation, hydrography, and other base geospatial data with an emphasis on



The above view of the conterminous United States displays various natural hazards which have recently taken place, including earthquakes, hurricanes, severe weather warnings, and wildland fires.

the vertical and horizontal integration of high-resolution ortho imagery with critical infrastructure datasets. Augmenting this infrastructure is the incorporation of local and non-traditional data with FEMA HAZUS national datasets including, essential facilities, high potential loss facilities, transportation systems and utility systems.

IOP pulls dynamic data from a variety of sources including: National Oceanic and Atmospheric Administration (NOAA) National Weather Service watches and warnings; USGS stream gages; National Interagency Fire Center wild land fire information; USGS National Earthquake Information Center earthquake information; Remote Access Weather Stations; and NOAA National Hurricane Center storms. IOP

incorporates a geospatial location for the associated dynamic event, crucial supporting information, and a hotlink to the originating agency for more detailed information.

Additional geospatial information and dynamic data feeds will be added as this project matures, including data from other Federal Civil agencies, the Department of Homeland Security, as well as relevant Department of Defense, state, local and tribal information.

IOP Functionality

IOP incorporates a series of sophisticated, user-friendly tools that help make IOP flexible enough to meet all of its users needs. For example, a set of tools allows operators to add, edit, or delete events on the fly, and link current reports to this

event information. This allows anyone accessing IOP to better understand both geographic context and detailed event information. In addition, IOP provides the capability to create a geospatial 'buffer of interest' around a specified event. The operator can query IOP to include other events or data of interest that fall within the defined buffer. Detailed information is available to the operator for all data elements within the defined buffer.

Two password-protected versions of IOP are currently deployed, operational and training. The operational version is used to support the continuous monitoring of real-time events, and the training version supports both personnel training and training exercises. Training exercises are performed throughout the year by a variety of different agencies. For instance, USNORTHCOM performs bi-annual training exercises; Vigilant Shield in the fall and Ardent Sentry in the spring.

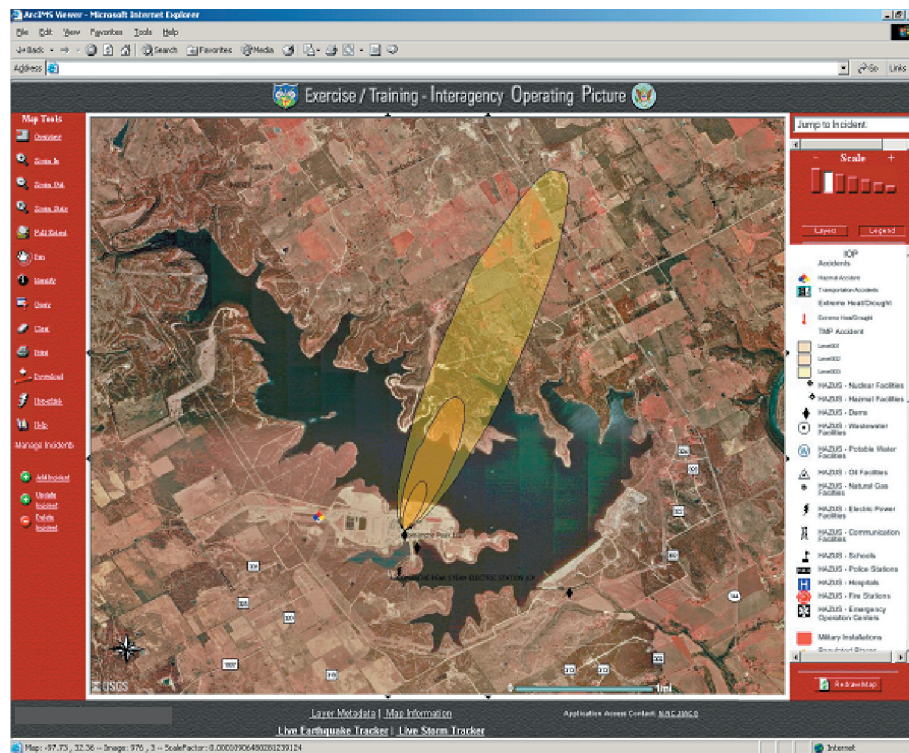
Summary

IOP combines base geospatial information with dynamic incident information to provide an integrated visual overview of events. Information is presented in a user-friendly web-enabled application that is available at all times. The end result of the deployment of IOP is an enhancement in the timeliness, efficiency, and effectiveness of incident management at NORAD/USNORTHCOM and the Domestic Warning Center.

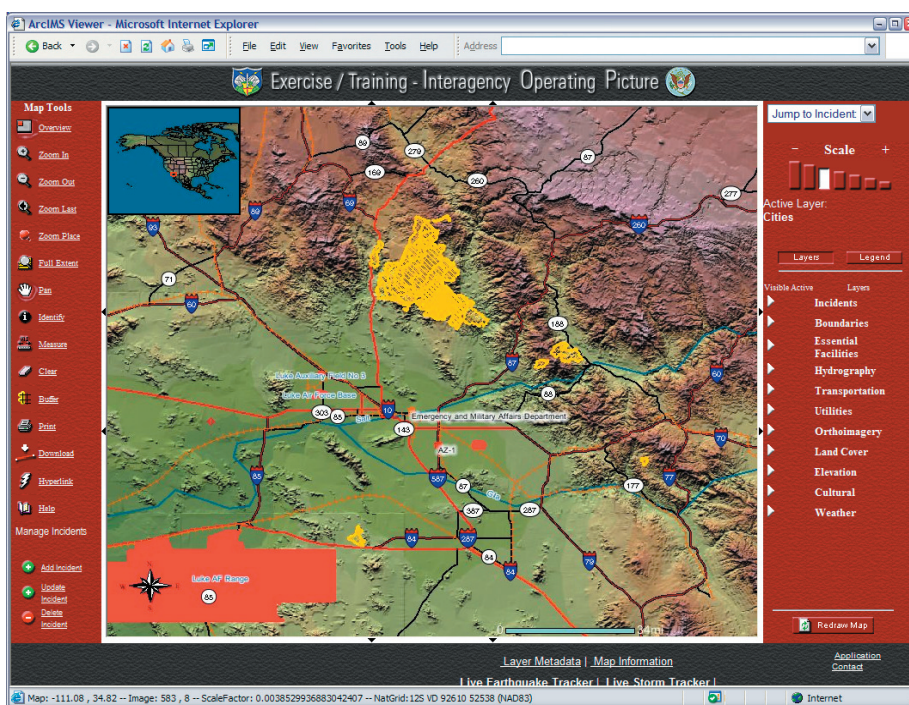
For more information

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The above image displays a theoretical radiation cloud plume dispersal pattern. In the case of an actual scenario, the IOP imagery will help situational awareness teams react faster when evacuating populated areas should an actual nuclear power plant accident or terrorist attack occur.



The above image displays a county-level view of wildland fire locations in relation to essential facilities around the Scottsdale/Phoenix, Arizona area.